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INTRA-FIRM TRADE AND U.S. PROTECTIONISM: THOUGHTS BASED ON A SMALL SURVEY

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Summary

A significant share of U.S. imports represents purchases of finished products and parts by American multinationals from their offshore units or deliveries of components to the domestic manufacturing operations of foreign investors. Yet intra-firm transactions have received scant attention in the congressional debate over how to rein in the seemingly runaway U.S. trade deficit. In the following article, Jane Sneddon Little, an economist with the Federal Reserve Bank of Boston, explores the factors behind the expansion of trade between parent companies and overseas affiliates and outlines the implications of this overlooked development.

Introduction

Intra-firm trade -- trade between U.S. firms and their foreign affiliates or owners -- is playing an increasingly important but largely ignored role in U.S. international commerce. At least 35 to 40 percent of U.S. imports and exports move between members of the same firm as a growing number of industries take on global characteristics. Yet, in a year [1985] when the U.S. trade deficit is approaching $150 billion and members of Congress have introduced over 300 pieces of protectionist legislation, this sizable volume of intra-firm trade has attracted little or no comment or analysis.

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One reason that intra-firm trade merits additional attention is that it may have reacted differently to recent exchange rate changes than did trade between unaffiliated firms. The 50 percent appreciation of the U.S. dollar which occurred between 1980 and early 1985 is considered a major cause of the deterioration of the U.S. trade balance. Whether intra-firm trade reacted differently from unaffiliated trade has consequences for the distribution of the costs and benefits of the adjustments required by the exchange rate change. If imports from unaffiliated firms were more sensitive to the dollar appreciation than imports from affiliates, say, then the dollar appreciation largely benefited unaffiliated foreign firms which expanded their exports to the United States and the U.S. users of these lower-cost imports. (The costs of adjustment were, of course, borne by U.S. producers of exports and import-competing goods.) On the other hand, if intra-firm imports rose faster than unaffiliated trade, then the products of U.S. multinationals accounted for a major part of the rise in imports caused by the dollar appreciation. To the extent that U.S. multinationals participated in expanding foreign production, they could protect their total output and earnings -- to the eventual benefit of their U.S. shareholders and even, conceivably, their U.S. employees.

As members of Congress come to deal with the piles of pending trade legislation, they need to know which U.S. industries and which U.S. trading partners are particularly involved in intra-firm trade. Where intra-firm trade plays an especially large role, pleas for protection may warrant an especially hard look.

This article will address these issues on the basis of information published by the U.S. Department of Commerce and a limited survey conducted by this author. The patterns that emerge indicate that intra-firm trade is indeed significant for many industries where import competition is causing concern. Moreover, although the growth of intra-firm trade has seemingly aggravated the deterioration of the U.S. trade balance, it probably also permitted the U.S. multinationals to make a relatively healthy adjustment to the strong dollar. Given the limited nature of the survey, however, many of these conclusions must remain tentative and require additional data for further testing.

Why Intra-Firm Trade Has Grown

Intra-firm trade, which generally follows the decision to produce abroad, tends to mature according to a typical pattern. As a first step, the parent frequently establishes a sales subsidiary or assembly plant to which the parent exports finished goods or components ready for final assembly. In the beginning, the foreign affiliate probably concentrates on selling to the host country market and then perhaps exports to third countries. If the parent acquires an ongoing firm in the host country, the new affiliate may continue to manufacture its own product line and may export some of that output through its new owner. Eventually, the foreign affiliate is likely to begin making some components of the parent's product for itself while continuing to import some crucial items from the home country. Finally, the affiliate may begin to export certain parts or products to the parent firm. Parent and affiliate may each specialize in particular items in order to reap the benefits of economies of scale.

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Although hesitant economic growth here and abroad slowed the rise in foreign direct investment (FDI) in the early 1980s, the U.S. FDI position abroad grew 25 percent between 1979 and 1984 (to $233 billion) while the foreign position in this country almost tripled (to $160 billion).[1] Increased FDI led to additional intra-firm trade.

For U.S. firms facing the very strong dollar and increased foreign competition, finding lower-cost production sites to protect domestic and foreign markets has undoubtedly become a primary motive for foreign investment. These motives were confirmed in a 1983 survey of 52 major international corporations, which indicated that the two main reasons that FDI increased during the 1982 recession were: 1) the momentum of investment plans and protection of existing market, and 2) an intensified search for lower-cost sources of production.[2]

Examples abound of U.S. firms trying to lower production costs by establishing a foreign plant and shipping its output to the United States. U.S. firms in industries such as electronics, textiles, drugs, automotive parts and toys have established 722 sister plants employing 202,000 workers in Mexico under the in-bond or "maquiladora" program. According to Mexican law, as long as the finished product is largely exported, U.S. investors may establish wholly owned assembly plants in specific but expanding areas, thereby gaining access to labor at one-seventh to one-eighth the U.S. cost, electricity at one-third of U.S. rates and various tax benefits.[3] Farther away, U.S. firms employ over half the 73,000 people working for electronics firms in Malaysia and have helped make that country the leading exporter of integrated circuits to the United States.[4] Similarly, all of the major U.S. auto companies have or are seeking joint ventures in Korea. General Motors, for instance, has formed a joint venture with the Daewoo Group to produce 167,000 cars a year in Korea by 1987. About half of these cars are destined for export, including shipment to the United States for distribution by Pontiac.[5]

[1]U.S. firms' continued interest in foreign production is possibly better illustrated by the growth of their equity in their incorporated foreign affiliates. The equity position grew $54 billion or 39 percent between 1979 and 1983. This growth was partially camouflaged in the net position figures by U.S. parent borrowings of $32 billion from their incorporated affiliates. The debt reflected comparatively low interest rates abroad, tax considerations and the expectation that the dollar would continue strong.

[2]The Office of The Group of Thirty, Foreign Direct Investment, 1973-82: A Survey of International Companies, New York, Group of Thirty, 1984, p. 21.

[3]Bill Mongelluzo, "In-Bond Program Expands Beyond U.S. Mexico Border," The Journal of Commerce, June 10, 1985, p. 1A.

[4]Barbara Crossette, "Malaysian High-Tech Industry," The New York Times, July 8, 1985, p. D4, and "Electronics Firms Bullish in Malaysia," The Journal of Commerce, April 23, 1985, p. 1A.

[5]Susan Chira, "South Korea's Auto Industry: Analysts Split on Outlook," The New York Times, July 9, 1985, p. D1.

Apparel makers are not typical high-tech, oligopolistic foreign investors, but they too are increasingly manufacturing abroad for the U.S. market in order to take advantage of wages plus fringe benefits that range from 30 cents an hour in China to $2.05 an hour in Hong kong (compared to $6.50 per hour in this country). Accordingly U.S. retailers and clothing manufacturers have begun "island hopping" to find places with low wages, investment incentives and no U.S. quotas. Moreover, some firms are taking advantage of a provision in the U.S. Tariff Schedule which allows companies to cut fabric in the United States, assemble the goods in Caribbean Basin countries, and reimport the final product to the United States while paying duty only on the labor and not on the domestic materials.[6]

If U.S. firms are expanding abroad because of the strong dollar, foreign firms clearly are continuing to rush into the United States despite the dollar appreciation. Their continuing expansion reflects foreign investors' optimism about the relative strength of the U.S. economy over the long term, the comparative attractiveness of this country's social and political climate, fear of the rising tide of protectionism in this country (particularly on the part of Japanese investors), and the ability to service the U.S. market better from a U.S. location.

As an example of this last motive, Dynamit Nobel Silicon, an Italian producer of silicon chips, is establishing a factory in South Carolina because "producing in the United States is a necessary choice for anyone who wants to significantly increase sales to American electronics companies. . . . For our customers the distance between Italy and California is such that [U.S. firms] do not want to get any more than 10 percent of their needs from us."[7]

Where Intra-Firm Trade Plays an Important Role

The U.S. Department of Commerce's periodic surveys of FDI provide a considerable amount of information on the importance and the industrial and geographic structure of intra-firm trade. Although the data are not highly current, they suggest that intra-firm trade plays a significant role in some of the industries threatened by import competition. Intra-firm transactions also account for a large share of U.S. imports from several of the countries singled out in pending trade bills.

Because the benchmark surveys on inbound FDI are for different years from the surveys on outbound FDI, it is unfortunately not possible to make direct comparisons of the behavior of foreign and U.S. multinational corporations.[8] However, assuming that the shares of U.S. trade accounted for by

[6]Steve Weiner, "Rules Force Retailers, Importers into Survival by Island-Hopping," and Hank Gilman, "More Apparel Makers Turn Abroad," The Wall Street Journal, May 9, 1985, p. 6.

[7]David Fleming, "Dynamit Nobel Silicon Pins Hopes on U.S. Move," The Journal of Commerce, December 17, 1984, p. 23B.

[8]The latest published benchmark surveys are U.S. Bureau of Economic Analysis, U.S. Direct Investment Abroad, 1977, April 1981, and Foreign Direct Investment in the United States, 1980, October 1983. The BEA is currently

U.S. multinationals in 1977 and by U.S. affiliates for foreign multinationals in 1980 remained approximately the same during that period, then intra-firm trade amounted to roughly 35 percent of U.S. exports and 40 percent of U.S. imports in the 1977-80 period.

As shown in table 1, the U.S. multinationals' intra-firm trade as a share of total U.S. trade increased considerably between 1966, the date of the previous benchmark survey, and 1977. By contrast, in the case of the U.S. affiliates of foreign multinationals, their intra-firm trade as a share of total U.S. trade changed very little between 1974 and 1982. Without up-to-date information -- especially on the U.S. parents' intra-firm trade -- it is hard to conclude from the official figures whether intra-firm trade is increasing in importance. Anecdotal evidence and the survey results reported in the next section certainly suggest that it is, however.

The dated benchmark figures also show some of the industries and the geographic areas in which intra-firm trade has played an especially large role. As table 2 indicates, intra-firm trade accounted for a significant share of total U.S. imports in many import-sensitive industries, if once again 1977 and 1980 data can be juxtaposed. For instance, intra-firm imports represented over 60 percent of U.S. imports of industrial chemicals and synthetics, nonelectrical equipment (including office and computing machines), and printing and publishing; half of U.S. imports of construction and related equipment and electronic components; one-third of U.S. imports of drugs and soap, cleaners and toiletries; and one-quarter of U.S. imports of fabricated metal products. Several of these industries are widely considered prime examples of sectors threatened by import competition. Unfortunately, for a few other industries of interest, the data are not available. (The appendix table provides additional data on intra-firm trade as a share of parent (or affiliate) total trade by industry.)

As for geography, table 3 shows for which trading partners intra-firm trade was especially important in 1977 and 1980. Among the developed countries, Canadian and British affiliates of U.S. multinationals produced particularly large shares of their countries' exports to the United States. As for the developing countries, moreover, the intra-firm exports of U.S. affiliates in Hong Kong, the "Other Western Hemisphere" (which includes the Caribbean countries), and Singapore accounted for a full 50 to 80 percent of this country's total imports from those areas in 1977.

Although the intra-firm trade of U.S. multinationals has not played a big role in this country's imports from Japan, Germany or the Netherlands, the intra-firm trade of Japanese, German and Dutch affiliates in the United States accounted for 40 to 60 percent of U.S. imports from those three countries. If the shares seen in 1977 can be assumed to have remained roughly constant through 1980, then 70 percent of U.S. imports from Japan and half of U.S.

([8]continued) working on the 1982 benchmark survey on FDI abroad which will be published in late 1985. The BEA also provides Foreign Direct Investment in the United States: Annual Survey Results which includes some intra-firm trade data. Starting with 1983 figures, the BEA will also publish annual information on outbound FDI and the trade between U.S. multinationals and their affiliates.

Table 1
Intra-Firm Trade as a Percentage of Total U.S. Trade[a]

	U.S. Parent	
	Exports to Foreign Affiliates	Imports from Foreign Affiliates
1966	17.6	11.0
1977	26.7	21.7
	U.S. Affiliate	
	Exports to Foreign Parent Group	Imports from Foreign Parent Group
1974	11.9	20.9
1980	9.5	19.2
1981	11.5	20.5
1982	11.4	21.5

[a] Census basis

Sources: U.S. Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1966*, and *1977 Foreign Direct Investment in the United States, 1980*, and Vol. 2, *Benchmark Survey, 1974*; *Foreign Direct Investment in the United States: Annual Survey Results, 1981* and *1982*; *Survey of Current Business*, various issues.

Table 2
Intra-Firm Imports as a Percentage of Total U.S. Imports, Selected Industries, 1977 and 1980

	U.S. Parent Intra-Firm Imports, 1977	U.S. Affiliate Intra-Firm Imports, 1980
All Industries	22	20
Petroleum	31	4
Manufacturing	18	5
Food & Kindred Prods.	d	4
Beverages	d	14
Chemicals & Allied Products	23	20
Industr. Chems. & Synths.	38	24
Drugs	n.a.	16
Soaps, etc.	d	37
Primary & Fab. Metals	14	6
Primary Metals	11	7
Fab. Metal Prods.	23	3
Machinery, except Elec.	55	9
Construction & Rel. Equip.	134	13
Office & Computing Equip.	d	d
Elec. & Electronic Equip.	23	12
Radio, T.V. & Communic.	d	8
Electronic Components	43	9
Motor Vehicles and Equip.	d	d
Textiles & Apparel	d	1
Lumber, Furn. & Fixtures	4	2
Printing & Publishing	53	10
Stone, Clay & Glass	15	4
Instruments & Rel. Prods.	9	5

d = data withheld to prevent disclosing information about individual firms.
n.a. = not available.
Source: U.S. Bureau of Economic Analysis and U.S. Bureau of the Census.

Table 3
Intra-Firm Imports as a Percentage of Total U.S. Imports from Selected Countries, 1977 and 1980

	U.S. Parent Intra-Firm Imports, 1977	U.S. Affiliate Intra-Firm Imports, 1980
Canada	37.8	12.1
Japan	4.8	63.2
European Community	14.9	33.9
France	n.a.	34.7
Germany	10.8	53.1
Italy	4.0	16.2
Netherlands	10.2	38.9
United Kingdom	26.7	20.6
Other Europe	20.4	46.5
Latin America	23.3	6.3
Brazil	13.2	7.6
Mexico	12.9	1.9
Other Western Hemisphere	73.0	5.0
Other Asia and Pacific	10.4	9.6
Hong Kong	54.2	4.9
Philippines	14.6	9.8
Singapore	80.0	n.a.
Taiwan	n.a.	11.3
Malaysia	n.a.	10.4
South Korea	n.a.	11.9

n.a. = not available.
Source: U.S. Bureau of Economic Analysis, U.S. Bureau of the Census, and the International Monetary Fund.

imports from Canada and the European Community were intra-firm in character. While intra-firm trade generally played a lesser role in U.S. trade with the developing countries, for some Southeast Asian and Caribbean countries the intra-firm trade share was roughly 60 to 80 percent.

Table 4 lists the countries that had the largest trade surpluses with the United States in 1984 and indicates which would be subjected to the 25 percent surcharge on all imports proposed in the Bentsen-Gephardt-Rostenkowski bill.[9] If the intra-firm trade shares for 1984 were similar to those for 1977-80, then intra-firm imports were significant in almost all cases. Although data for Taiwan and Korea are not fully available, it seems likely that intra-firm trade plays a considerable role there as in other Southeast Asian countries.

Table 4
Countries with the Largest Trade Surpluses versus the United States in 1984
Billions of Dollars

Japan[a]	36.8
Canada	20.4
Common Market	13.3
Taiwan[a]	11.1
Mexico	6.3
Hong Kong	5.8
Brazil[a]	5.6
South Korea[a]	4.0

[a] Countries that would be subject to a 25 percent surcharge on imports according to the Bentsen-Gephardt-Rostenkowski bill

Source: U.S. Department of Commerce

Does Congress really want to restrict U.S. multinationals' imports from their foreign affiliates? Perhaps so, since foreign affiliates are generally manned by foreign labor at the apparent short-run expense of workers in this country. Nevertheless, these imports have also permitted U.S. firms to weather the strong dollar and ferocious foreign competition in better shape than they would have without them. Do U.S. voters want to thwart U.S. affiliates of foreign multinationals from importing the parts they need to thrive and provide employment in this country? At least these questions deserve current data and more discussion.

[9]The Bentsen-Gephardt-Rostenkowski will would impose a 25 percent surcharge on imports from countries whose exports to the United States and the world exceeded their imports from these areas by certain percentages, if the U.S. Trade Representative determined these nations had unfair trade barriers. The surcharge would be waived if the surpluses were reduced by specified percentages over a given time period.

Survey Results

In an effort to collect some clues about recent multinational behavior and to develop a short time series for examining the impact of exchange rate changes on affiliated versus unaffiliated trade, the author conducted a survey of New England firms. The survey went to 475 firms which had identified themselves as being active in international commerce or which were foreign-owned firms with a known mailing address.[10] One hundred four companies responded (a 22 percent response rate) without any follow-up to solicit additional replies.[11]

Of the 104 responses, 57 firms were multinationals. Eighteen of these firms were foreign-owned and 39 were U.S. firms with foreign affiliates. (Of course, not all of these respondents answered the survey fully.) All the countries known to be important sources and recipients of FDI were well represented.[12]

For both foreign firms coming to this country and U.S. firms investing abroad, the survey results suggest considerable current FDI activity. Of the 16 foreign affiliates that provided a date for the beginning of foreign ownership, 10 were established in 1979 or later. Moreover, 26 U.S. firms had set up 28 new affiliates since 1979. This intense activity occurred despite the 1982 recession, continuing weakness abroad, and the huge appreciation of the dollar.

[10]The firms had identified themselves as being active in international commerce by their membership in the International Business Center of New England or by designating themselves as foreign traders in the Directory of New England Manufacturers. Since we selected manufacturing members of the IBC and relied on the Directory just mentioned, the U.S. firms were mostly large and mid-sized manufacturers. The foreign firms were identified through a U.S. Department of Commerce, International Trade Administration annual publication entitled Foreign Direct Investment in the United States: 1983 Transactions (and earlier issues), and from lists developed for the IBC. The foreign-owned firms were not necessarily manufacturers and were included regardless of size.

[11]No effort was made to solicit additional replies once it became clear that the original research plan would not fit the data supplied. The original intent was to develop a data set of matched pairs. The matched pairs were to include each respondent's exports (imports) with its affiliate in a chosen country and with all residents of the same country. Because, for psychological reasons or legal commitment, many firms channel all or most of their trade with a given country through their affiliate there, in about half the cases the respondents supplied a single number where we had expected a matched pair.

[12]Among the foreign-owned firms, Swiss, German and English investors predominated while investors from Austria, Canada and the Netherlands were also represented. Their major affiliates were in Canada (6), the United Kingdom (5), Germany and Switzerland (4 each), Japan (2) and France, Austria and Hong Kong (1 each). The U.S. multnationals identified major affiliates in the United Kingdom (11), Canada (9), Germany (8), Japan (6), Holland (4), France (3), "Europe" (3), and one each in Australia, Switzerland, Belgium, Costa Rica, Brazil, Taiwan and the Dominican Republic.

Among the firms responding to the survey, the typical multinational corporation conducted over half of its trade within its own firm in 1983. For the U.S. respondents the mean share of intra-firm exports in total exports was 50 percent while the mean share of intra-firm imports in total imports was 58 percent. For the typical U.S. affiliate of a foreign firm 44 percent of exports were intra-firm while 70 percent of imports represented affiliate trade.

Survey recipients were asked to supply figures for 1979 through 1983 for their intra-firm exports to their two major affiliated customers and for their total exports to the same two countries. Similarly, they also provided intra-firm import figures for their two major affiliated suppliers along with data on their total imports from the same two countries.[13] From these data it appears that the respondents' intra-firm trade with major affiliates grew much faster between 1979 and 1983 than did their total trade with the same countries. Total exports to important affiliates rose 35 percent between 1979 and 1983 while total exports to the same countries rose 19 percent. Similarly, total imports from major affiliates surged 279 percent during that period while total respondent imports from the same countries grew 56 percent.[14]

A major question motivating this survey was whether intra-firm trade reacts "differently" from unaffiliated trade to macroeconomic developments such as exchange rate changes. Because intra-firm trade is potentially "managed" trade, it seemed possible that the pace or size of its adjustment would differ from that of trade between unaffiliated firms. Presumably, foreign affiliates add to a firm's flexibility and permit it to shift production locations between parent and various subsidiaries more rapidly than would be likely to occur when adjustment involved unaffiliated firms. In the latter case, the firms would not only have no reason to cooperate but some would actively resist any change. If so, intra-firm trade might be more sensitive to macro developments than unaffiliated trade. On the other hand, because affiliates sometimes depend on each other for parts, have commitments to purchase a fixed quantity of a product, or have more opportunities for hedging, intra-firm trade might be less sensitive to changing economic conditions.

Accordingly, survey recipients were asked whether the firm had ever shifted production sites because of an exchange rate change. Four of 28 U.S. firms said "yes," and another indicated that it was considering such a move.

[13]As already mentioned, in 54 out of 100 cases, all trade with a chosen country was channeled through an affiliate.

[14]We also calculated the annual percent changes for affiliate exports and imports and for the corresponding total firm exports and imports with the same countries. We then tested to see whether the means of these matched pairs of data (affiliate versus total exports or imports in the same country) were significantly different from each other. We examined all export observations, all import observations and observations for the United Kingdom, Canada and Germany, the countries with the largest number of affiliates. Only in the case of U.K. imports was the mean annual percent change in affiliate trade significantly different from the mean annual percent change in total trade at the 5 percent significance level. The mean annual change in imports from U.K. affiliates was 59 percent while the mean annual change in imports from the United Kingdom was 14 percent.

Three of the positive replies mentioned a shift away from the United States while two involved transfers between other countries. In other words, one-tenth of the U.S. respondents to this question in our very small survey were willing to move production out of the United States because of the dollar appreciation.

The data provided by the survey respondents also suggest that intra-firm trade reacted to macro developments differently than did unaffiliated trade between 1979 and 1983. As table 5 shows, the respondents' intra-firm exports and imports both grew faster than total U.S. trade weighted according to the industries represented in the survey group.[15] As we saw earlier, however, many of the affiliates were established quite recently. As they expanded their trade from very low levels, phenomenal percentage increases in the trade data could result. Even when the impact of start-up situations is excluded, however, ongoing intra-firm imports still grew almost three times as fast as total U.S. imports (which include start-ups). By contrast, ongoing intra-firm exports grew substantially less than total U.S. exports in the same industries. Finally, trade with unaffiliated firms in countries with major affiliates both declined a considerable amount over those years.

Table 5
Growth in Survey Respondents' Trade and Comparable U.S. Trade from 1979 to 1983
Percent

U.S. Imports[a]	51.4
Respondent Imports from:	
Countries with Major Affiliated Suppliers	55.8
Affiliates	279.1
Affiliates, excluding Start-Ups	150.3
Unaffiliated Suppliers in the Same Countries	-98.7
U.S. Exports[a]	23.7
Respondent Exports to:	
Countries with Major Affiliated Customers	18.6
Affiliates	34.6
Affiliates, excluding Start-Ups	11.5
Unaffiliated Customers in the Same Countries	-22.5

[a] Weighted average of industries represented in respondent group.
Source: Author's survey and *Survey of Current Business*.

In appears, thus, that even without start-up activity the respondents' intra-firm imports grew faster than total U.S. imports in the context of the dollar appreciation, as multinationals began to obtain abroad parts or product lines for use in the United States. Seemingly, some of that intra-firm import growth was at the expense of unaffiliated suppliers in affiliate countries, whose imports to U.S. multinationals grew slowest of all the groups examined.

[15]Survey group trade was heavy on electrical and nonelectrical machinery, instruments, chemicals, and transportation equipment other than motor vehicles.

Because of start-up activity, the respondents' intra-firm exports also grew faster than comparable U.S. exports. Without start-ups, intra-firm exports did not grow as fast as total U.S. exports in the same industries, but they still performed much better than the respondents' declining exports to unrelated firms in the same countries. Intra-firm exports undoubtedly held up relatively well, in the face of the strong dollar, because the affiliates expanded production to serve the local or third-party markets and required additional inputs from the United States. Again, some of these exports to affiliates replaced exports to unaffiliated third parties in the same country. Altogether then, between 1979 and 1983, these respondents' affiliate imports appeared more sensitive to the dollar appreciation and relatively weak economic conditions abroad than were total U.S. imports, while intra-firm exports were less sensitive than total U.S. exports.

Implications

If the few New England firms which answered the survey are at all representative of U.S. multinationals in general -- and they very well may not be -- then it would appear that the growth of FDI and intra-firm trade may have increased the sensitivity of U.S. imports to a dollar appreciation while dampening the sensitivity of U.S. exports. Because the increase in import sensitivity appears greater than the decrease in export sensitivity, the growth in intra-firm trade may have aggravated the U.S. trade deficit in recent years. (Of course, it is possible that multinational corporations merely react faster than other traders and that the ultimate adjustment of the U.S. trade balance to the dollar appreciation will be no different because of their activities.)

However, the multinationals can hardly be criticized for expanding foreign production and increasing imports from abroad, two normal and expected reactions to any dollar appreciation; moreover, because U.S. multinationals can participate both in raising foreign production and in increasing U.S. imports, they are able to maintain larger shares of output and sales than they would if they did not operate abroad. Their healthy adjustment to the dollar appreciation is in the interest of their owners and, conceivably, their U.S. employees as well. Because most foreign affiliates rely on inputs from their U.S. parents, the U.S. multinationals' foreign expansion has probably helped maintain U.S. output at a higher level than it would have been otherwise. In addition, firms better able to maintain their output and earnings are also better able to invest in research and product development -- activities which involve U.S. labor in particular.

As domestic firms have become less and less able to compete with foreign producers, U.S. multinationals have increasingly joined the foreign competition. This muddled state of affairs is likely to alter the politics of domestic and international trade negotiations considerably. In particular, it is unlikely that the U.S. public will or should react to requests for import relief with equal urgency when a significant part of the "injurious" imports are known to represent the output of U.S. firms abroad or are required by sought-after foreign investors providing jobs in this country. (Of course, domestic firms requiring imports could make exactly the same point.)

Naturally, the political pressures on decision-makers will also become more diffuse because of the growing dichotomy between "have" and "have not" U.S. firms. For instance, one U.S. firm with no Japanese affiliates recently filed an anti-dumping petition against Japanese producers and is seeking the

imposition of import duties on their chips. By contrast, the U.S. firms with Japanese affiliates are supporting a Semiconductor Industry Association effort to improve access to the Japanese market.[16]

One positive consequence of the shifting alliances accompanying the growth of intra-firm trade may, thus, already be emerging -- even amid the generalized clamor for more protection from foreign competition. It seems that as more and more U.S. firms produce abroad, demands for erecting specific U.S. trade barriers may become less persuasive while pressures for dismantling foreign trade restrictions may intensify. As an example, the Bentsen-Gephardt-Rostenkowski bill already mentioned would only apply to nations with "unfair" trade barriers. Any resulting reduction in trade distortions would, of course, be a net gain for the world economy.

Conclusion

Although public discussion of the huge U.S. trade deficit largely ignores intra-firm transactions, they actually play a major role in U.S. trade. This observation particularly applies to several of the industries and trading partners specified in the protectionist legislation pending before Congress. Accordingly, as policymakers debate the many trade bills before them, they may want to devote more attention then they have in the past to the significance and consequences of intra-firm trade. Indeed, just airing the idea that a considerable share of U.S. imports represents the output of U.S. multinationals or the inputs required by foreign (and domestic?) investors providing jobs for U.S. workers may ease public frustration with our seemingly intractable trade problems.

Because the survey results reported in this article are based on a small group which may not be at all representative of other U.S. firms, it must be stressed that any conclusions based on these responses are highly tentative and require further testing. Nevertheless, the survey results at least provide some provocative clues about these intra-firm trade issues.

From the data supplied by the survey respondents, it appears that U.S. intra-firm trade increased its share of U.S. international commerce between 1979 and 1983. Moreover, during that period U.S. intra-firm imports were more sensitive to the appreciation of the dollar than were unaffiliated imports, largely because U.S. multinationals were establishing lower-cost production sites abroad to protect domestic markets from foreign firms' competition. By contract, U.S. intra-firm exports were less sensitive to the appreciation of the dollar than were unaffiliated exports -- again largely because U.S. multinationals expanding abroad required supporting exports from the United States. Finally, the increased sensitivity of U.S. intra-firm imports to the dollar appreciation more than offset the decreased sensitivity of U.S. intra-firm exports between 1979 and 1983; thus, on balance, the growth of intra-firm trade apparently aggravated the deterioration of the U.S. trade balance at that time.

If further data and testing confirm these tentative conclusions, one additional conjecture emerges: because U.S. multinationals can easily participate in two expected adjustments to a dollar appreciation -- increased foreign

[16]Eduardo Lachica, "Micron Files Petition Against Japanese Firms," The Wall Street Journal, June 28, 1985, p. 26.

production and rising U.S. imports -- they can make a comparatively healthy adjustment to the strong dollar. They should not require protection against import competition for their survival.

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Appendix Table

Intra-Firm Trade as a Percentage of Parents' (Affiliates') Total Trade, by Industry

	U.S. Parents, 1977		U.S. Affiliates, 1980	
	Imports	Exports	Imports	Exports
All Industries	41.9	34.7	62.0	40.2
Mining	d	d	89.3	36.9
Petroleum	39.7	36.3	26.3	60.4
Manufacturing	56.1	41.9	75.0	29.2
Food & Kindred Products	d	21.9	48.9	20.3
Grain Mill & Bakery Products	d	d	d	d
Beverages	52.7	d	79.6	d
Other	d	d	d	d
Chemicals & Allied Products	35.4	45.0	79.5	38.6
Industrial Chemicals & Synthetics	40.2	40.4	90.5	37.7
Drugs	41.6	74.8	81.8	71.4
Soaps, Cleaners & Toiletries	d	55.0	56.4	58.5
Agricultural Chemicals	d	d	d	d
Other	39.5	d	d	d
Primary & Fabricated Metals	38.5	24.1	71.3	27.9
Primary Metals	36.0	21.0	71.2	31.6
Ferrous	22.1	9.8	74.0	23.9
Nonferrous	49.2	29.9	70.6	33.8
Fabricated Metal Products	46.1	29.6	71.5	12.2
Machinery, except Electric	58.6	42.1	88.4	28.4
Construction & Rel. Machinery	42.2	23.4	73.9	20.4
Special Industry Machinery	n.a.	n.a.	92.6	18.5
Office & Computing Machinery	d	81.0	d	19.0
Other	66.4	d	d	47.5
Electric & Electronic Equipment	60.3	34.5	90.2	40.5
Household Appliances	d	31.3	n.a.	n.a.
Radio, T.V. & Commun. Equipment	d	41.0	93.9	d
Electronic Components	93.7	63.8	76.2	30.3
Other	d	21.0	96.5	d
Transportation Equipment	d	50.2	57.0	7
Motor Vehicles & Equipment	d	75.1	d	9
Other	35.1	7.5	d	4
Other Manufacturing				
Tobacco	d	d	n.a.	n.a.
Textile Products & Apparel	d	30.1	67.3	40.0
Lumber & Furniture	37.8	8.0	76.5	21.2
Paper & Allied Products	d	39.8	d	43.3
Printing & Publishing	55.7	46.3	43.7	32.9
Rubber Products	d	40.6	67.5	27.9
Misc. Plastics Products	d	36.6		
Glass Products	d	28.2	70.4	14.8
Stone, Clay, Cement & Concrete	70.0	25.6		
Instruments & Related Products	38.9	65.3	86.9	39.1
Other	22.7	d	d	35.2
Wholesale Trade	7.5	8.2	66.8	42.4
Motor Vehicles & Equipment	5.7	5.2	d	d
Metals & Minerals			42.0	44.3
Other Durable Goods			88.9	55.7
Nondurable Goods	12.6	8.8	d	d
Retail Trade	25.1	66.1	37.2	20.6

d = data withheld to prevent disclosing information about individual firms

n.a. = not available

Source: U.S. Bureau of Economic Analysis, *U.S. Direct Investment Abroad, 1977* and *Foreign Direct Investment in the United States, 1980*